Kolak, Shari

From: Smith, Madelyn <madelyn.smith@epa.ohio.gov>
Sent: Thursday, June 12, 2014 3:45 PM
To: Kolak, Shari
Cc: Montfort, Guy (Guy.Montfort@tetratech.com); LeGalley, Erin; Reed, Allison
Subject: RE: tentative East Troy conference call to discuss Risk Assessment scoping memo
Attachments: 14 06 12 ETCA RAAD Ohio EPA Comments.docx

Shari and Guy,

Please see the attached comments from Ohio EPA regarding the Risk Assessment Assumptions Document.

Erin and I are available next week Monday, Wednesday, or Thursday any time (until 3:00 ET).

Please let me know if you have any questions,

Maddie

Madelyn Smith
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***Ohio EPA's email addresses are changing. Please update your contact information to the new extension @epa.ohio.gov*

From: Kolak, Shari [mailto:kolak.shari@epa.gov]
Sent: Thursday, June 12, 2014 12:19 PM
To: Smith, Madelyn
Subject: tentative East Troy conference call to discuss Risk Assessment scoping memo

Hi Maddie,

I'd like to schedule a conference call with Guy to discuss the Agencies comments on the risk assessment scoping memo. When will you and your folks be available? I'd like to get MDEQ's comments at least three days before the call. Thanks, Shari

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Human health risk assessment
Issue A: Screening levels

1. **Revise p. 6 to state that the <u>most recent</u> RSLs for residential soil, tapwater, and indoor air will be used as soil, groundwater, and indoor air screening levels, respectively.** U.S. EPA now provides RSL tables with a target risk of 1E-06 and a target hazard of 0.1, so there is no need to adjust the target hazard quotient.

2. **Revise p. 6 to remove Ohio EPA's generic numerical standards from the soil screening levels and Ohio EPA's unrestricted potable use standards from the groundwater screening levels.** Ohio EPA's generic numerical standards, even divided by 10, are inappropriate screening levels because they were developed strictly as clean-up levels for Ohio EPA's Voluntary Action Program.

3. **Provide screening levels for the groundwater to indoor air pathway in an appendix, and provide the input parameters (e.g. groundwater temperature of 11°C, attenuation factor of 0.001 for groundwater) used to generate these screening levels in U.S. EPA's VISL Calculator.**

4. **Revise p. 6 to state that screening levels for exterior soil gas and sub-slab vapor will be generated using U.S. EPA's VISL Calculator. Provide screening levels for exterior soil gas and sub-slab vapor in an appendix, and provide the input parameters (e.g. attenuation factor = 0.03) used to generate these screening levels in U.S. EPA's VISL Calculator.**

Issue B: Background concentrations

1. **Revise p. 8 to (a) state which COPCs in which medium, if any, will be compared to site-specific background concentrations, (b) justify why the background concentrations are representative of a medium, and (c) explain how the background comparisons will be used in the risk assessment (or if they will only be used from a risk management perspective).** For example, according to p. 8, risk and hazard will be quantified at one surface water sample background location, at one sediment background sample, and one to two groundwater sample background locations per plume. See U.S. EPA's "Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites" (2002) for further guidance on when background samples are needed, and how to statistically evaluate a data set of background samples.

2. **If background concentrations will be used in the risk assessment, then (a) conduct appropriate site-specific background sampling and (b) remove USGS Mineral Resources On-Line Spatial Data as a background source.** According to p. 8, because there currently are no site-specific background locations, USGS Mineral Resources On-Line Spatial Data will be used as background concentrations. These data are unacceptable to use as background concentrations because they are not site-specific. According to U.S. EPA's "Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites" (2002),

background reference areas should have the same physical, chemical, geological, and biological characteristics as the site being investigated but has not been affected by activities on the site. See Ohio EPA DERR's "Use of Background for Remedial Response Sites" (2009) regarding the determination and use of representative background levels in environmental media that is acceptable to Ohio EPA.

Issue C: Conceptual site model, exposure units, and exposure point concentrations

1. **Revise the conceptual site model to consider preferential pathways for groundwater migration and vapor intrusion.**

2. **If multiple exposure units are proposed, (a) provide a map illustrating the exposure units (or "sub-exposure units"), (b) justify the designation of all exposure units, and (c) explain how risk and hazard will be quantified for each receptor in each exposure unit.** An exposure unit is a risk term and should be defined in terms of reasonably anticipated receptor movement.

3. **Revise p. 12 to state that the groundwater exposure point concentrations will be calculated in accordance with OSWER Directive 9283.1-42 and identify the data sets that will be used to calculate the exposure point concentration for each plume.** According to p. 12, a 95% UCL will be calculated for 2-5 wells within each exposure and sub-exposure area (currently undefined), but this is inconsistent with the OSWER Directive 9283.1-42. According to this directive, OSWER recommends that at least 10 data points from at least 3 monitoring wells within the core of the plume be used to calculate the 95% UCL as the exposure point concentration for each COPC. If the 95% ULC is greater than the maximum detected concentration, or if less than 3 wells are within the core of the plume, OSWER recommends using the maximum detection as the exposure point concentration. Also, p. 12 states that for the groundwater to indoor air pathway, only the shallowest interval will be used to calculate an exposure point concentration because VOCs in deeper groundwater within the same zone are (and will remain) unavailable for vapor intrusion. This conclusion should be further evaluated from a groundwater perspective and, later, from a risk management perspective.

4. **Revise p. 17 to state that for lead in soils, the maximum concentration (or 95% UCL) will be used as the exposure point concentration for <u>all</u> receptors.** Currently p. 17 states that the average lead concentration will be used as the exposure point concentration for residential and recreational receptors, but that the maximum lead concentration will be used as the exposure point concentration for construction/excavation receptors.

5. **Revise p. 10 to state that groundwater exposure during construction/excavation activities is a complete pathway.** According to p. 10, groundwater is assumed to enter and accumulate in construction trenches only if groundwater is 8 feet or less below ground surface. According to Figure 3, the pathway is considered complete in the conceptual site model but the footnotes indicate groundwater occurs 10 feet below ground surface. However, depth to groundwater fluctuates seasonally.

Issue D: Exposure factors, toxicity values, and risk equations

1. **Provide all exposure factors that will be used in the risk assessment.** According to p. 14, the exposure factors will be submitted under separate cover; however, this should be part of the RAAD.

2. **Revise p. 14 to state that (a) the <u>most recent</u> RSLs will be used as a source for toxicity values and (b) updated toxicity values more recent than the last RSL revision, if available, will be used.** Because the RSL tables are only updated approximately semiannually, it is important to incorporate any new toxicity information.

3. **Revise p. 15 to state that chronic toxicity values (according to the proposed hierarchy on p. 14) will be used in the absence of subchronic toxicity values when evaluating construction/excavation receptors.** According to p. 15, subchronic toxicity values will be used for construction/excavation receptors; however, the text does not indicate the process for determining the toxicity values for COPCs without subchronic toxicity values.

4. **Provide all chemical and physical data that will be used in the risk assessment.** Alternatively, revise the document to state that the most recent RSLs will be used as the source for all chemical and physical data.

5. **Provide all equations that will be used to evaluate the risk and hazard posed to each receptor.** Currently p. 14 states that "pathway-specific variations of the generic equations above were used to calculate intakes of COPCs" but these variations were not provided.

6. **Provide the input parameters that will be used to calculate exposure point concentrations in air in a trench.** According to the footnotes of Figure 3, the Virginia Department of Environmental Quality's methodology will be used to evaluate the construction/excavation exposure to groundwater in a trench pathway; however, the specific model (i.e. groundwater shallower than 15 feet BGS) and input parameters (e.g. trench dimensions) need to be stated in the RAAD.

Issue E: Ecological risk assessment

1. **Revise p. 20 to include the following hierarchy of sediment screening levels that will be used in in the screening step of the ecological risk assessment.**

    i. Consensus-based threshold effect concentration (TEC) values located in MacDonald, DD; Ingersoll, CG; and Berger, TA (2000). "Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems." Arch. Environ. Toxicol. 39, pp. 20-31. It may be helpful to also list the probable effect concentration (PEC) values for risk management purposes.

    ii. Sediment values located in U.S. EPA Region 5. "Ecological screening levels" (2003).

2. **Revise p. 20 to (a) identify which groundwater data will be used to demonstrate compliance with Ohio Water Quality Standards and (b) identify the OMZM and OMZA values for aquatic life as the Ohio Water Quality Standards (note that these are ARARs, not screening levels).** Currently p. 20 states that surface water concentrations will be compared to Ohio Water Quality Standards. However, groundwater concentrations representative of

groundwater entering the surface water body (i.e. the Great Miami River) must be compared to the outside mixing zone maximum (OMZM) and outside mixing zone average (OMZA) values in accordance with OAC 3745-1-07.

3. **Address the comments in Issue B, above, regarding background concentrations in the context of the ecological risk assessment.**

4. **Clarify whether or not endangered species are present at the site.** According to p. 20, 16 plants and 7 animals are state and federally-listed as threatened, endangered, or rare species that potentially occur in Miami County. It is unclear if any of these species are present at the site and are therefore of concern in the ecological risk assessment.

5. **Revise p. 20 to remove the term "habitat areas" or, alternatively, define "habitat areas," justify their designation, and explain how they will be evaluated.** According to p. 20, the maximum COPEC concentrations will be identified for each "habitat area" and that groundwater data closest to the river will be the primary basis of evaluation.

6. **Revise p. 20 to state that the biological criteria study will be evaluated after the screening step.** Because Ohio EPA recently completed a biological assessment of the Great Miami River adjacent to the site, this study should be evaluated after the screening step regardless of whether or not COPC concentrations exceed screening levels. Typically, if COPC concentrations exceed sediment and surface water screening levels, the next step is the biological assessment and, if necessary, further evaluation in accordance with Ohio EPA DERR's Ecological Risk Assessment Guidance.